

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended) ~~A method for transporting substrates between a plurality of processes, comprising:~~

- ~~—— loading the substrates into a pod from an atmosphere of a first process;~~
- ~~—— circulating a gaseous atmosphere through interior of the pod intermittently or continually in such a way to selectively remove at least one contaminant including moisture, particulate substances or chemical substances, to expose the substrates to a controlled atmosphere while the substrates are retained in the pod; and~~
- ~~—— unloading the substrate from the pod to introduce into a second process.~~

A method for transporting substrates between a plurality of processes, comprising:

- loading the substrates into a pod from an atmosphere of a first process;
- contacting the substrates to the pod directly or indirectly, the pod having a conductive part so as to enable static charges to be drained from the pod;
- removing at least one contaminant of moisture, particulate substances and chemical substances intermittently or continually so as to expose the substrates to a controlled atmosphere while the substrates are retained in the pod; and
- unloading the substrates from the pod for introduction to a second process.

Claim 2 (Original) A method according to claim 1, wherein an atmosphere in the first process is different than an atmosphere in the second process.

Claim 3 (Currently Amended) ~~A method according to claim 1, wherein a gas circulated in the pod contains no particles of larger than $0.1 \mu\text{m}$ in excess of 10 particles/m^3 , or organic substances in excess of $1 \mu\text{g/m}^3$~~

The method of claim 1, and further comprising circulating a gas in the pod having less than $10 \text{ particles per cubic meter}$ of a size larger than $0.1 \mu\text{m}$.

Claim 4 (Original) A method according to claim 1, wherein a gas in the pod is circulated and/or controlled in any selective pattern or atmosphere.

Claim 5 (Currently Amended) ~~A method according to claim 4, wherein an interior environment of the gaseous atmosphere is controlled in any selective pattern by operating a circulation apparatus and/or dehumidifying apparatus~~

The method of claim 1, wherein the controlled atmosphere of the pod is a gaseous atmosphere forming an interior environment of the pod that is controlled by operating at least one of a circulations apparatus and a dehumidifying apparatus.

Claim 6 (Currently Amended) ~~A method according to claim 1, wherein an interior environment of the pod is controlled in any selective pattern according to information on an atmosphere used in the first process~~

The method of claim 1, wherein the controlled atmosphere of the pod forms an interior environment that is controlled based on information of the atmosphere of the first process.

Claim 7 (Currently Amended) ~~A method according to claim 1, wherein a pod having most suitable capabilities is selected for use according to information on an atmosphere of the first process~~

The method of claim 1, and further comprising selecting the pod to be used in said loading that has the most suitable function from a plurality of pods having different functions based on information of the atmosphere of the first process.

Claim 8 (Currently Amended) ~~A substrate transport apparatus comprising a substrate transport pod that can be sealed hermetically for holding substrates therein, said substrate transport pod comprising:~~

~~—— at least one filter for purifying the gas, including a filter for removing particular substances, a filter for removing chemical substances or a dehumidifying apparatus for removing moisture; ——— a circulation apparatus for circulating a purified gas; and~~

~~— a holding apparatus for holding the substrates so as to match the state of the substrates by exposing the substrates to the purified gas~~

A substrate transport apparatus comprising a substrate transport pod for holding substrates therein, said substrate transport pod comprising:

at least one filter for purifying gas selected from a filter for removing particulate substances, a filter for removing chemical substances and a dehumidifying apparatus for removing moisture;

a circulation apparatus for circulating purified gas;

a holding apparatus for holding the substrates in contact with said pod, either directly or indirectly, said holding apparatus having a conductive part so as to enable static charges to be drained from said pod.

Claim 9 (Currently Amended) ~~A method according to claim 8, wherein the pod is provided with a gas sensor for detecting a processing gas~~

The apparatus of claim 8, wherein said pod is provided with a gas sensor for detecting a processing gas.

Claim 10 (Currently Amended) ~~A method according to claim 9, wherein the circulation apparatus is controlled according to information provided by the gas sensor~~

The apparatus of claim 9, wherein said circulation apparatus is arranged to be controlled according to information provided by said gas sensor.

Claim 11 (Original) A substrate transport pod for containing, storing or transporting substrates, comprising:

a pod main body and a door for hermetic sealing of the pod main body, which is formed primarily of a material having moisture absorption coefficient of not more than 0.1 %, wherein the pod main body is in contact with the substrates directly or indirectly and has a conductive part so as to enable static charges to be drained from the pod main body.

Claim 12 (Currently Amended) A substrate transport pod according to claim 11, wherein a flow guiding structure is provided in interior of the pod main body for guiding a flow of a gas to the substrates.

Claim 13 (Original) A substrate transport pod according to claim 11, wherein a sensor is provided for detecting whether the door is opened or closed.

Claim 14 (Original) A substrate transport pod according to claim 11, wherein a sensor is provided for detecting presence of the substrates.

Claim 15 (Currently Amended) A substrate transport pod according to claim 13, wherein ~~the~~ a gas circulation means for circulating a gas through the pod is provided, and stopped when the door is in the closed state.

Claim 16 (Original) A substrate transport pod according to claim 14, wherein the gas circulation means is provided, and operated only when it is detected that the door is closed and the pod contains the substrates.

Claim 17 (Original) A substrate transport pod according to claim 11, wherein the pod is provided with a gas circulation means in its interior space for circulating an internal gas.

Claim 18 (Original) A substrate transport pod according to claim 11, wherein the pod is provided with a humidifying means in its interior space for removing moisture from an internal gas.

Claim 19 (Original) A substrate transport pod according to claim 11, wherein the pod is provided with powering means for supplying electrical power.

Claim 20 (Original) A substrate transport pod according to claim 19, wherein the powering means comprises secondary batteries installed on the pod.

Claim 21 (Original) A substrate transport pod according to claim 20, wherein a powering means is further provided for charging the secondary batteries.

Claim 22 (Original) A substrate transport pod according to claim 19, wherein the powering means is constructed to be non-contacting and is operated electromagnetically.

Claim 23 (Original) A substrate transport pod according to claim 19, wherein the powering means is constructed to be contacting through point contacts.

Claim 24 (Original) A substrate transport pod according to claim 19, wherein the powering means is provided at least on a load port of a manufacturing apparatus, in a storage facility or on a transport apparatus.

Claim 25 (Original) A substrate transport pod according to claim 19, wherein powering is started as the pod is seated in the powering means.

Claim 26 (Original) A substrate transport pod according to claim 11, wherein the pod is provided with a circulation apparatus for circulating a gas inside the pod and at least one of a particle filter, a chemical filter and a dehumidifying apparatus.

Claim 27 (Original) A substrate transport pod according to claim 26, wherein a filter and a gas circulation means are formed as a unit in a form of a rod.

Claim 28 (Original) A substrate transport pod according to claim 26, wherein a filter is cylinder shaped and the gas flows in a radial direction of the cylindrical filter.

Claim 29 (Original) A substrate transport pod according to claim 26, wherein a filter is rod shaped and the gas flows in a longitudinal direction of the rod filter.

Claim 30 (Original) A substrate transport pod according to claim 26, wherein a ducting and/or a flow control apparatus is provided for guiding the gas.

Claim 31 (Original) A substrate transport pod according to claim 11, wherein the pod has a gas intake opening and a gas discharge opening for the gas circulated inside the pod.

Claim 32 (Original) A substrate transport pod according to claim 31, wherein a reverse flow prevention mechanism is provided at least on the gas intake opening or the gas discharge opening.

Claim 33 (Original) A substrate transport pod according to claim 31, wherein a ducting and/or a flow control apparatus is provided to connect to the gas intake opening.

Claim 34 (Original) A substrate transport pod according to claim 31, wherein a chemical filter, and a particle filter and/or a dehumidifying apparatus is provided in the vicinity of the gas intake opening and/or a gas discharge opening.

Claim 35 (Original) A substrate transport pod according to claim 11, wherein the pod is oriented so that a center of gravity in a horizontal direction lies within at least 90 % or preferably 70 % of a radius of substrates.

Claim 36 (Original) A substrate transport pod according to claim 11, wherein the pod is provided with an internal environment matching a processing atmosphere for substrates contained in the pod, and is used to transport the substrates between a plurality of processes.

Claim 37 (Original) A substrate transport apparatus comprising: a substrate transport pod that can be sealed hermetically for holding substrates therein, said substrate transport pod comprising:

at least one of a particle filter, a chemical filter, and a dehumidifying apparatus for removing, respectively, particulate substances, chemical substances, and moisture from a gas circulated inside the pod;

a gas circulation apparatus for circulating a purified gas;

a holding apparatus for holding the substrates so as to keep the state of the substrates by exposing the substrates to the purified gas; and

an identifier for distinguishing individual pods, whose historical data is managed by a computing apparatus.

Claim 38 (Original) A substrate transport pod according to claim 37, wherein the pod is provided with a data storing apparatus.

Claim 39 (Original) A substrate transport pod according to claim 37, wherein the pod has a means for receiving external signals, and controls internal environment in the pod according to the external signals.

Claim 40 (Original) A substrate transport pod according to claim 37, wherein an internal environment is controlled by sending and receiving information between the pod and a processing apparatus.

Claim 41 (Original) A substrate transport pod according to claim 37, wherein the pod is provided with processing history management information on substrates, and processing of the substrates is managed by transferring the processing history management information from one pod to other pod.

Claim 42 (Original) A substrate transport pod according to claim 41, wherein the processing history management is carried out by way of a host computer network.

Claim 43 (Original) A substrate transport pod according to claim 41, wherein a processing history is transferred from one pod to other pod by a controller provided on a processing apparatus.

Claim 44 (Original) A substrate transport pod according to claim 37, wherein a washing interval for a pod is managed by information stored in memory means of the pod.

Claim 45 (Original) A substrate transport pod according to claim 37, wherein a filter change interval of a pod is computed from a product of a processed gas volume and a duration of pod operation.

Claim 46 (Original) A substrate transport pod according to claim 37, wherein a washing interval is estimated from a duration of pod operation.

Claim 47 (Currently Amended) A substrate transport pod according to claim 37, wherein residual power of the secondary batteries provided for a pod is measured, and charging is carried out to a necessary level of power.

Claim 48 (Original) A substrate transport pod according to claim 37, wherein management of information on individual pods is carried out by sending and receiving information for individual pods by wire or radio transmission through a network.

Claim 49 (Original) A substrate transport pod according to claim 37, wherein processing history management information for a lot is transferred from a pod used in a preceding step to a pod to be used in a succeeding step.

Claim 50 (Original) A substrate transport pod according to claim 37, wherein information on a pod to be washed is sent to a pod washing machine so that the pod can be selected and subjected to washing.

Claim 51 (Currently Amended) ~~A substrate transport pod according to claim 8, wherein a level of ammonia in an interior atmosphere of a pod is maintained below a given level when the pod contains substrates whose surfaces are resist-coated~~

The method of claim 1, wherein the substrates have surfaces that are resist-coated and the controlled atmosphere has an ammonia level controlled below a given level.

Claim 52 (Currently Amended) ~~A substrate transport pod according to claim 51, wherein an ammonia level in interior of the pod is controlled by adsorbing ammonia gas by means of a chemical filter~~

The method of claim 51, wherein the ammonia level is controlled by adsorbing ammonia gas with a chemical filter.

Claim 53 (Currently Amended) ~~A substrate transport pod according to claim 51, wherein a humidity level in interior of the pod is controlled by removing moisture using a dehumidifying apparatus provided for the pod~~

The apparatus of claim 8, and further comprising a dehumidifying apparatus provided for the pod so that a humidity level interior of the pod is controlled by removing moisture.

Claim 54 (Currently Amended) ~~A substrate transport pod according to claim 8, wherein the pod is provided with a contaminant removal means and target components are selectively chosen for removing particulate contaminants, metallic contaminants, ionic contaminants, organic contaminants and moisture, and the pod is used for return transport for each process~~

The method of claim 1, wherein the pod is provided with a contaminant removal means and target components are selectively chosen for removing particulate contaminants, metallic contaminants, ionic contaminants, organic contaminants and moisture, and the pod is used for return transport for each process.

Claim 55 (Currently Amended) ~~A method for manufacturing a semiconductor device by transporting substrates between a plurality of processes, comprising-~~

- ~~—— loading the substrates into a pod from an atmosphere of a first process;~~
- ~~—— circulating a gaseous atmosphere through interior of the pod in such a way to selectively remove at least one contaminant including moisture, particulate substances or chemical substances, to expose the substrates to a controlled atmosphere intermittently or continually while the substrates are retained in the pod; and~~
- ~~—— unloading the substrates from the pod and introducing the substrates into a second process~~

A method for manufacturing a semiconductor device by transporting substrates between a plurality of processes, comprising:

- loading the substrates into a pod from an atmosphere of a first process;
- contacting the substrates to the pod directly or indirectly, the pod having a conductive part so as to enable static charges to be drained from the pod;
- circulating a gaseous atmosphere through the interior of the pod to remove at least one contaminant of moisture, particulate substances and chemical substances so as to expose the substrates to a controlled atmosphere intermittently or continually while the substrates are retained in the pod; and
- unloading the substrates from the pod and introducing the substrates into a second process.

Claim 56 (New) The method of claim 1, wherein the pod is used in a wiring process in which copper wiring and low dielectric films are formed on the substrates.

Claim 57 (New) The apparatus of claim 8, wherein the pod further comprises a moisture aversion part including at least one of a filter, a dehumidifying apparatus and a circulation apparatus, that is detachable for washing.

Claim 58 (New) The apparatus of claim 57, wherein a plate can be attached to the pod, whereby the pod can be washed by a pod washing machine when the moisture aversion part is detached and the plate is attached.